



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/857,025 | 05/31/2001 | Kotaro Kawamura | 2001-0678A | 7698 |

513 7590 03/16/2004

WENDEROTH, LIND & PONACK, L.L.P.
2033 K STREET N. W.
SUITE 800
WASHINGTON, DC 20006-1021

EXAMINER

COCKS, JOSIAH C

ART UNIT PAPER NUMBER

3749

DATE MAILED: 03/16/2004

12

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/857,025

Applicant(s)

KAWAMURA ET AL.

Examiner

Josiah Cocks

Art Unit

3749

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2003.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10, 12, 13, 19-22 and 27 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-10, 12, 13, 19-22, and 27 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Request for Reconsideration

1. Receipt of applicant's request for reconsideration filed 12/29/03 is acknowledged.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 19-21 and 27 rejected under 35 U.S.C. 102(e) as being anticipated by *Endoh et al.* (US # 6,234,787) (note: *Endoh et al.* is the US patent corresponding to PCT document WO98/06977 filed under § 371 and published 2/19/98).

Endoh et al. discloses in Figures 1-4 a waste gas treatment system and method of operating substantially as described in applicant's claims 19-21 and 27 including a cylindrical combustion chamber and burner member wherein the combustion chamber includes an outer wall (11) and an inner wall (inside wall of 12) and thermal insulator made of a porous ceramic material (see col. 3, lines 14-24) disposed between the inner and outer walls. *Endoh et al.* also discloses multiple burning gas inlet parts (2a, 2b, and 2d), which form auxiliary burning gas inlet parts and burners (3) forming auxiliary burning gas nozzles in the sidewall of a cylindrical

Art Unit: 3749

member of the burner (see Figs. 1 and 2). The examiner considers that the burners (3) are in the vicinity of the bottom opening of the burner. *Endoh et al.* further discloses purge gas supply means (38), air nozzles (4) (see col. 3, lines 41-61), a chamber (20) containing spray nozzles (19) for liquid coolant, and spray nozzles (5) for removing powders from the inner surface of the wall (12).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Art Unit: 3749

6. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Endoh et al.* (US # 6,234,787) in view of *Holmer* (US # 4,547,148) (note: *Endoh et al.* is the US patent corresponding to PCT document WO98/06977 filed under § 371 and published 2/19/98).

Endoh et al. discloses in Figures 1-4 a waste gas treatment system substantially as described including a cylindrical combustion chamber and burner member wherein the combustion chamber includes an outer wall (11) and an inner wall (inside wall of 12) and thermal insulator made of a porous ceramic material (see col. 3, lines 14-24) disposed between the inner and outer walls.

Endoh et al. possibly does not disclose that the combustion chamber is formed from an inner wall made of fiber-reinforced ceramic material comprising ceramic cloth coated with a binder-containing ceramic material.

Holmer teaches the use of a fibrous refractory pad/cloth (15) made from Fiberfrax™, a fiber-reinforced ceramic material, and including an inorganic refractory binder (see col. 1, lines 10-19) and col. 2, lines 28-33)

Therefore, in regard to claims 1-3, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the porous combustion chamber walls of *Endoh et al.* to include the ceramic fiber material taught by *Holmer* as this material desirably functions as a effective insulator producing high levels of radiant heat in the combustion chamber (see *Holmer*, col. 1, lines 20-36). Having the fibers bound together by an inorganic refractory binder creates a pad/cloth that is strongly bounded together (see *Holmer*, col. 3, lines 28-42)

Art Unit: 3749

7. Claims 4-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Endoh et al.* (US # 6,234,787) in view of *Lipp* (US # 4,857,075) (note: *Endoh et al.* is the US patent corresponding to PCT document WO98/06977 filed under § 371 and published 2/19/98).

Endoh et al. discloses in Figures 1-4 a waste gas treatment system and method of operating substantially as described in applicant's claims 4-9 including a cylindrical combustion chamber and burner member wherein the combustion chamber includes an outer wall (11) and an inner wall (inside wall of 12) and thermal insulator made of a porous ceramic material (see col. 3, lines 14-24) disposed between the inner and outer walls. *Endoh et al.* also discloses multiple burning gas inlet parts (2a, 2b, and 2d), which form auxiliary burning gas inlet parts and burners (3) forming auxiliary burning gas nozzles in the sidewall of a cylindrical member of the burner (see Figs. 1 and 2). The examiner considers that the burners (3) are in the vicinity of the bottom opening of the burner. *Endoh et al.* further discloses purge gas supply means (38), air nozzles (4) (see col. 3, lines 41-61), a chamber (20) containing spray nozzles (19) for liquid coolant, and spray nozzles (5) for removing powders from the inner surface of the wall (12).

Endoh et al. possibly does not disclose a cooling means for the auxiliary burning gas inlet parts wherein the cooling means includes a cooling jacket.

Lipp teaches a burner having burning gas inlet part wherein this part is cooled by means of a cooling jacket (32) that receives cooling water (see Fig. 1).

Therefore, in regard to claims 4-9, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the waste gas treatment system and method of *Endoh et al.* to incorporate the cooling jacket of *Lipp* for the desirable purpose of maintaining the burner parts at a constant temperature (see *Lipp*, col. 10, lines 33-43).

8. Claims 10, 12, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Endoh et al.* in view of *Pritchard et al.* (US # 5,462,429) (cited by applicant) (note: *Endoh et al.* is the US patent corresponding to PCT document WO98/06977 filed under § 371 and published 2/19/98).

Endoh et al. discloses in Figures 1-4 a waste gas treatment system substantially as described in applicant's claims 10, 12, and 13 including a cylindrical combustion chamber and burner member wherein the combustion chamber includes an outer wall (11) and an inner wall (inside wall of 12) and thermal insulator made of a porous ceramic material (see col. 3, lines 14-24) disposed between the inner and outer walls.

Endoh et al. possibly does not disclose a dust scraping plate secured to a distal end of a vertically moving shaft.

Pritchard et al. teaches a mechanical wiper for a waste gas incinerator including a wiper rod (40) that is adapted to move vertically (see Fig. 1) and wiper segment/plate (49). The rod (40) is considered to be adapted to move vertically as it is connected to rod (32) which, as shown in the Figure, is connected to the cap (16) and duct (20) by screw attachment means and are considered by the examiner to allow for vertical movement.

Therefore, in regard to claims 10, 12, and 13, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the waste gas treatment system of *Endoh et al.* to incorporate the mechanical wiper of *Pritchard et al.* for the desirable purpose of aiding in the removal of combustion products buildup from the inner wall of the combustion chamber (see *Pritchard et al.*, col. 2, lines 56-64).

9. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Endoh et al.* in view of *Pillard* (US # 3,885,919) (note: *Endoh et al.* is the US patent corresponding to PCT document WO98/06977 filed under § 371 and published 2/19/98).

Endoh et al. discloses in Figures 1-4 a waste gas treatment system and method of operating substantially as described in applicant's claim 22 including a cylindrical combustion chamber and burner member wherein the combustion chamber includes an outer wall (11) and an inner wall (inside wall of 12) and thermal insulator made of a porous ceramic material (see col. 3, lines 14-24) disposed between the inner and outer walls. *Endoh et al.* also discloses multiple burning gas inlet parts (2a, 2b, and 2d), which form auxiliary burning gas inlet parts and burners (3) forming auxiliary burning gas nozzles in the sidewall of a cylindrical member of the burner (see Figs. 1 and 2). The examiner considers that the burners (3) are in the vicinity of the bottom opening of the burner. *Endoh et al.* further discloses purge gas supply means (38), air nozzles (4) (see col. 3, lines 41-61), a chamber (20) containing spray nozzles (19) for liquid coolant, and spray nozzles (5) for removing powders from the inner surface of the wall (12).

Endoh et al. does not disclose that the internal diameter of the waste gas inlet and/or the cylindrical member gradually increases toward the combustion chamber.

Pillard teaches a waste gas treatment system wherein the waste gas is fed into chambers with sections (8a, 8b...8g, Fig. 2) or (12a, 12b, ...12f, Fig. 3) that gradually increase (see Figs. 1-3).

Therefore, in regard to claim 22, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the system of *Endoh et al.* to incorporate

Art Unit: 3749

the gradually increasing chambers of *Pillard* as the arrangement of the chambers desirably attains a good quality of combustion of the gaseous effluents (see *Pillard*, col. 2, lines 10-21).

Response to Arguments

10. Applicant's arguments filed 12/29/03 have been fully considered but they are not persuasive. Applicant arguments as to the lack of a showing of a binder in the *Ahmady* reference are moot as *Holmer* is now relied upon to show both a fiber reinforced ceramic pad/cloth and an inorganic binder.

Applicant also argues that none of the references cited include an auxiliary burner nozzle such as recited in applicant's claim 4. However, as noted above, the examiner considers that the burner(s) (3) of *Endoh et al.* extend through a sidewall of a cylindrical member of the burner and are in the vicinity of a bottom opening.

Applicant also argues that none of the references, including *Pritchard et al.*, disclose a shaft of dust remover that can move vertically as claimed by applicant. However, applicant recites that the shaft is adapted to move vertically. It has been held that the recitation that an element is "adapted to" perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchison*, 69 USPQ 138. As noted in section 8 above, the examiner considers that the screw attachment of rod (32) allows for vertical movement and thus, the limitation of "adapted to move vertically" is met.

Art Unit: 3749

Applicant also argues that none of the references, including *Pillard*, disclose cylindrical members that have an inner diameter that gradually increases towards the combustion chamber. Applicant argues that the perforated ring (6) between the combustion chambers (4) in *Pillard* are of constant diameter and the reference is not properly applied to show gradually increasing diameters. However, the examiner notes that the embodiments shown in Figs. 2 and 3 of *Pillard* show cylindrical sections (8a, 8b,...8g) and (12a, 12b,...12f) that have gradually increasing inner surfaces as recited in applicant's claims.

Applicant argues that there is not sufficient motivation to combine the references applied in this Office Action. However, the examiner considers that there is proper motivation to combine the references and that the references show all the limitations of applicant's claims.

Conclusion

11. This action is made non-final. A THREE month shortened statutory period for reply has been set. Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) months from the mailing date of this communication.

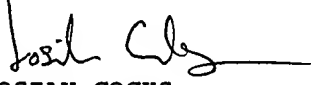
12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Josiah Cocks whose telephone number is (703) 305-0450. The examiner can normally be reached on weekdays from 7:30 AM to 5:00 PM.

Art Unit: 3749

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ira Lazarus, can be reached at (703) 308-1935. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0861.

jcc
March 12, 2004


JOSIAH COCKS
PATENT EXAMINER
ART UNIT 3749